



CLAIMS

1 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

a device which is used by a person performing a task;  
an electrostatic discharge contact element which is associated with said device and which is located with respect to said device to be in a position to be repeatedly contacted by the person while the person is performing a task and which is adapted to be repeatedly contacted by the person while the person is performing the task;

a discharge circuit which includes a first resistor element electrically connected to said contact element;

an inductor element in series with said contact element; and  
a ground circuit electrically associated with said discharge circuit.

2 (Amend). The system defined in Claim [[1]] 88 wherein ~~the first~~ said resistor element is physically located closely adjacent to said contact element and is in series with said inductor element.

3 (Canceled). The system defined in Claim 1 wherein said first resistor element is in series with said time-extended contact element and is in series with said inductor element.

4 (Previously Amended). The system defined in Claim 2 further

including a second resistor element in series with said inductor element.

5 (Amend). The system defined in Claim 4 wherein said inductor element is physically located between said ~~first~~ resistor element and said second resistor element ~~elements~~ and said ~~first~~ resistor element is physically located between said contact element and said inductor element.

6 (Amend). The system defined in Claim 2 wherein said ~~first~~ resistor element is located within one foot of said contact element.

7 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including a second resistor element, and said second resistor element having a value of at least one megohm and is in series with said inductor element.

8 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including a capacitor in series with said ~~first~~ resistor element.

9 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including a transistor in series with said ~~first~~ resistor element.

10 (Amended). The system defined in Claim [[1]] 88 further including a second electrostatic discharge contact element.

11 (Canceled). The system defined in Claim 1 wherein the time extended contact is greater than 100 milliseconds.

12 (Amended). The system defined in Claim [[1]] 88 further including a user contactable element and said electrostatic discharge contact element is located in said user element.

13 (Previously Amended). The system defined in Claim 12 wherein said user contactable element includes a computer mouse pad.

14 (Amended). The system defined in Claim [[1]] 88 wherein said ~~first~~ resistor element has a value of approximately sixty megohms.

15 (Amended). The system defined in Claim [[1]] 88 wherein said ground circuit includes signal leads.

16 (Amended). The system defined in Claim [[1]] 88 further including a conductor electrically connecting said contact element to said ground circuit, with said resistor element being located within one foot of said contact element and further including second resistor element in said conductor and located

spaced from said ~~first~~ resistor element and adjacent to said ground circuit.

17 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a device which is used by a person performing a task;

- an electrostatic discharge contact element which is located with respect to said device to be in a position to be repeatedly contacted by the person while the person is performing a task and which is adapted to be repeatedly contacted by the person while the person is performing the task;

- a discharge circuit which includes a first resistor element in series with said contact element and which is located within one foot of said contact element;

- an inductor element which is separate from the first resistor element; and

- a ground circuit electrically associated with said discharge circuit.

18 (Canceled). The system defined in Claim 17, wherein said first resistor element has a value of approximately five megohms.

19 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD)

comprising:

a device which is used by a person to perform a task;

an electrostatic discharge contact element which is located and adapted to be repeatedly contacted by ~~a~~ the person while the person is performing the task;

a discharge circuit which includes a first resistor element in series with said contact element and which has a resistance in excess of five megohms;

an inductor element; and

a ground element electrically connected to said discharge circuit.

20 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including an electrical plug and a second resistor element, with said second resistor element being located at least partially in said electrical plug.

21 (Original). The system defined in Claim 20 wherein said electrical plug includes a ground prong.

22 (Original). The system defined in Claim 20 further including a test circuit.

23 (Amended). The system defined in Claim 20 and wherein said ~~first~~ resistor element is physically located closely adjacent to

said contact element.

24 (Canceled). The system defined in Claim 23 and wherein said control circuit further includes an inductor and a second resistor in series with said first resistor.

25 (Canceled). The system defined in Claim 1 wherein said inductor element has an inductance of less than one millihenry.

26 (Canceled). The system defined in Claim 24 wherein said second resistor has a resistance of one megohm.

27 (Previously Amended). The system defined in Claim 20 wherein said electrical plug includes a prong positioned as a hot prong, said prong being non-conductive from said plug.

28 (Previously Amended). The system defined in Claim 27 wherein said electrical plug further includes a neutral prong, said neutral prong being non-conductive from said plug.

29 (Previously Amended). The system defined in Claim 20 wherein said electrical plug includes female receptacles.

30 (Previously Amended). The system defined in Claim 20 wherein said electrical plug includes an internal resistor having a value

of at least one megohm.

31 (Original). The system defined in Claim 20 wherein said plug includes a plurality of grounding connectors.

32 ( Amended). The system defined in Claim ~~[[1]]~~ 88 further including a plug adapter and a second resistor element, with said second resistor element being at least partially located in said plug adapter.

33 (Previously Amended). The system defined in Claim 32 further including an output lead from said plug adapter.

34 (Allowed). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a headphone device;

- an electrostatic discharge contact element which is located in said headphone device;

- a discharge circuit electrically connected to said contact element, said discharge circuit including a first resistor element in series with said contact element and an inductor element in series with the first resistor element; and

- a ground circuit electrically associated with said discharge circuit.



35 (Allowed). The system defined in Claim 34 wherein said headphone device includes two electrical conductors.

36 (Allowed). The system defined in Claim 35 further including a resistor element connected to each conductor.

37 (Allowed). The system defined in Claim 34 further including a jack on said headphone device to which said control circuit is releasably connected.

38 (Allowed). The system defined in Claim 34 wherein said headset includes an ear pad and said first resistor element is part of said ear pad.

39 (Allowed). The system defined in Claim 34 wherein said headphone device includes a headset pad.

40 (Allowed). The system defined in Claim 39 wherein said headset pad has a resistance of at least 0.025 megohms.

41 (Allowed). The system defined in Claim 34 wherein said discharge circuit is connected to an ear pad on said headphone device.

42 (Canceled). A system for protecting a person or equipment from

surprise, damaging or painful electrostatic discharge (ESD) comprising:

a user contactable device having a plurality of user contactable locations thereon the user contactable locations on said user contactable device being located and adapted so that at least one user contactable location of the plurality of user contactable locations is located and adapted to be contacted repeatedly while a user works on performs a task;

an electrostatic discharge contact element at each user contactable location of the plurality of user contactable locations;

a discharge circuit electrically connected to each of said contact elements and including a first resistor element and an inductor element; and

a ground circuit electrically associated with said discharge circuit.

43 (Canceled). The system defined in Claim 42 wherein the user contactable locations of said user contacting device are electrically isolated from each other.

44 (Canceled). The system defined in Claim 43 wherein the user contactable locations include a plurality of shapes.

45 (Canceled). The system defined in Claim 42 wherein said

control circuit further includes a capacitor.

46 (Canceled). The system defined in Claim 42, wherein each of said first resistor elements has a resistance of approximately five megohms.

47 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a computer accessory such as a computer keyboard, or a computer mouse, which is used by a person performing a task;

- an electrostatic discharge contact element which is located in said computer accessory, said computer accessory being located and adapted to be contacted repeatedly while the person performs task;

- a discharge circuit which includes a first resistor element electrically connected to said contact element;

- an inductor element electrically connected to said first resistor element; and

- a ground circuit electrically associated with said discharge circuit.

48 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

a computer keyboard, the computer keyboard being adapted to be contacted repeatedly by a person while the person performs a task;

an electrostatic discharge contact element which is located in said computer keyboard to be in contact with a person who is using said computer keyboard and who is to be protected from electrostatic discharge when using said computer keyboard while the person is performing the task;

a discharge circuit electrically connected to said contact element, said discharge circuit including a first resistor element having a resistance, and an inductor element in series with the first resistor element; and

a ground circuit electrically associated with said discharge circuit.

49 (Canceled). The system defined in Claim 48 wherein said computer keyboard includes a key and said contact element is located in the key.

50 (Currently Amended). [[A]] The system defined in Claim 88  
further including for protecting a person from surprise or  
uncomfortable electrostatic discharge (ESD) comprising:  
— an electrostatic discharge conducting contact element which  
is in time-extended contact with a person who is to be protected  
from electrostatic discharge when in use;

~~a ground circuit, and~~

a Litz wire electrically connecting said electrostatic discharge contact element to said ground circuit.

51 (Amended). The system defined in Claim 50 further including a second resistor in series between said Litz wire and said ground circuit.

52 (Canceled). The system defined in Claim 1 wherein said first resistor element is in series with said contact element.

53 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including a second resistor element, with said ~~first~~ resistor element being located closer to said contact element than said second resistor element and said second resistor element being located closer to said ground circuit than said ~~first~~ resistor element.

54 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

a device which is used by a person to perform a task;  
an electrostatic discharge contact element which is located and adapted to be contacted repeatedly by ~~[[a]]~~ the person while the person is performing the task;

a ground circuit which includes a conductor;  
a first resistor element which is connected to said conductor near said ground circuit, said first resistor element being sized to prevent AC shock current from moving from said ground circuit past said first resistor and through said conductor toward said contact element;  
a second resistor element in said conductor nearer to said contact element than said first resistor to reduce initial ESD contact shock; and  
an inductor element electrically connected in series to said first resistor element.

55 (Previously Amended). The system defined in Claim 20 wherein said plug includes a plurality of internal resistor elements.

56 (Canceled). The system defined in Claim 48 further including an inductor element in series with said contact element.

57 (Canceled). The system defined in Claim 47 further including an inductor element in series with said contact element.

58 (Canceled). The system defined in Claim 42 further including an inductor element in series with each contact element.

59 (Canceled). A method of protecting a person or equipment from

surprise or uncomfortable electrostatic discharge (ESD)

comprising:

providing an electrostatic discharge (ESD) contact element;  
repeatedly contacting the contact element while performing a task; and  
reducing radio frequency interference associated with an ESD event.

60 (Canceled). The method defined in Claim 59 including a step of further protecting a person who is initially contacting the ESD contact element from shock associated with a grounding error.

61 (Canceled). The method defined in Claim 60 wherein the time-extended period exceeds 100 milliseconds.

62 (Canceled). The method defined in Claim 61 further including steps of repeatedly touching the ESD contact element.

63 (Canceled). The method defined in Claim 60 wherein the person has an initial amount of ESD upon initial contact and said step of repeatedly touching the ESD contact element drains less than the initial amount of ESD at each touch.

64 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD)

comprising:

a device which is used by a person to perform a task;

an electrostatic discharge contact element which is located and adapted to be contacted repeatedly by the person while the person is performing the task;

means for reducing radio frequency interference associated with electrostatic discharge contact element; and

means for grounding said electrostatic discharge contact element.

65 (Canceled). The system defined in Claim 64 further including means for protecting said means for grounding from effects associated with improper grounding.

66 (Canceled). The system defined in Claim 65 further including a plurality of electrostatic discharge contact elements.

67 (Canceled). A method of protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

performing a task;

providing an electrostatic discharge (ESD) contact element;

repeatedly contacting the ESD contact element while

performing the task; and

preventing current from the ESD contact element from



instantaneously building up during each contact of the contact element.

68 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a device used by a person to perform a task;

- an electrostatic discharge contact element which is located on said device and which is adapted to be contacted repeatedly by the person while the person performs the task;

- means for preventing current from said electrostatic discharge contact element from instantaneously building up during each contact of said electrostatic discharge contact element; and

- means for grounding said electrostatic discharge contact element.

69 (Canceled). A method of protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- performing a task;

- providing an electrostatic discharge contact element;

- repeatedly contacting the electrostatic discharge contact element while performing the task; and

- limiting the development and build-up of high impulse leading edges of current flowing from the electrostatic discharge

contact element during each contact of the electrostatic discharge contact element.

70 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

    a device used by a person to perform a task;

    an electrostatic discharge (ESD) contact element which is located with respect to said device and which is adapted to be repeatedly contacted by the person while the person performs the task; and

    an inductor element in series with said electrostatic discharge contact element.

71 (Canceled). The system defined in Claim 70 wherein said inductor element has an inductance in the range of 1 to 2 millihenry.

72 (Canceled). The system defined in Claim 70 wherein said inductor element is in a discharge path between said electrostatic discharge (ESD) contact element and ground.

73 (Amended). The system defined in Claim ~~[[1]]~~ 88 wherein said inductor element is physically spaced apart from the ~~first~~ resistor element in said discharge circuit.

74 (Canceled). The system defined in Claim 70 further including a resistor element which is physically spaced apart from said inductor element.

75 (Canceled). The system defined in Claim 70 further including an electrical plug with said inductor element being located in said electrical plug.

76 (Canceled). The system defined in Claim 75 further including a resistor element in said electrical plug.

77 (Canceled). The system defined in Claim 76 wherein said resistor element is at least one megohm.

78 (Canceled). The system defined in Claim 76 wherein said resistor element is physically separate from said inductor element.

79 (Canceled). The system defined in Claim 70 wherein said inductor element is in a discharge path connected to said electrostatic discharge (ESD) contact element.

80 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

a device which is used by a person to perform a task;  
a discharge path associated with said device;  
an electrostatic discharge (ESD) contact element which is associated with said device and which is located with respect to said device and which is adapted to be repeatedly contacted by the person while the person performs the task; and  
an inductor element which is a series element in said discharge path.

81 (Canceled). The system defined in Claim 70 further including a plug.

82. (Canceled). The system defined in Claim 1 further including a plug.

83 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including additional equipment and wherein said discharge path is adapted to be electrically connected to said additional equipment.

84 (Amended). The system defined in Claim ~~[[1]]~~ 88 wherein said ground circuit is electrically connected to additional equipment.

85 (Canceled). The system defined in Claim 1 further including a capacitor element connected in electrical series with said

inductor element.

86 (Amended). The system defined in Claim ~~[[1]]~~ 88 further including a second electrostatic discharge contact element connected to said first resistor element.

87 (Previously Presented). The system defined in Claim 86 wherein the electrostatic discharge contact element and the second electrostatic discharge contact element each includes a resistor element.

88. (Allowed). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a ground system having stray inductance and resistance;

- a plurality of devices electrically connected to said ground system;

- an electrostatic discharge contact element on at least one device of said plurality of devices;

- a resistor element electrically connected to ~~each~~ said contact element; and

- an inductor element electrically interposed between said contact elements and said ground system and which is connected to said ground system at a connection location.

89 (Allowed). The system defined in Claim 88 wherein said inductor element has an inductance which is greater than the distributed inductance of said ground system at the connection location between said inductor element and said ground system.

90 (Allowed). The system defined in Claim 89 further including a second resistor element in series with said inductor element.

91 (Amended). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a ground system having stray inductance and resistance;
- an electrostatic discharge contact element; and
- an inductor electrically interposed in series between said contact element and said ground system and which is connected to said ground system at a connection location, said inductor element having an inductance which is greater than the stray inductance of said ground system at a connection location between said inductor element and said ground system.

92 (Canceled). The system defined in Claim 91 wherein said inductor element has an inductance which is greater than the stray inductance of said ground system at a connection location between said inductor element and said ground system.

93 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

an electrostatic discharge contact element incorporated in a device being used by a person to perform a task and which is located and adapted to be repeatedly contacted by the person while performing the task;

an inductor element in electrical series with said electrostatic discharge contact element; and

a ground system electrically connected to said inductor element.

94 (Canceled). The system defined in Claim 93 further including a resistor element electrically connected in series to said inductor element.

95 (Amended). The system defined in Claim ~~[[91]]~~ 88 further including an electrical plug and wherein said inductor element is at least partially located in said electrical plug.

96 (Canceled). The system defined in Claim 93 further including an electrical plug and wherein said inductor element is at least partially located in said electrical plug.

97 (Canceled). A system for protecting a person or equipment from

surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a device which is used by a person to perform a task;
- a ground system having stray inductance and resistance;
- an electrostatic discharge (ESD) contact element which is located with respect to said device to be in a position and location to be repeatedly contacted by the person while the person performs a task and which is adapted to be repeatedly contacted by the person while the person performs the task; and
- an inductor element which is electrically interposed in series between said electrostatic discharge contact element and said ground system and which is connected to said ground system at a connection location.

98 (Canceled). The system defined in Claim 97 wherein said inductor element has an inductance greater than the stray inductance of said ground system at the location of connection between said inductor element and said ground system.

99 (Canceled). A system for protecting a person or equipment from surprise, damaging or uncomfortable electrostatic discharge (ESD) comprising:

- a device which is used by a person performing a task;
- an electrostatic discharge contact element which is associated with said device and which is located with respect to



'said' device and which is adapted to be repeatedly contacted by the person while the person is performing the task.